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Forest Insect Conditions on the Caribou National Forest
1966

This is a report of insect conditions on the Caribou National Forest during 1966. Material for this report was gathered primarily from aerial survey data supplemented by on-the-ground biological evaluation surveys. The location of most of the insect problems and the insect species responsible is shown on the copy of the aerial survey map mailed to you earlier.

The most serious forest insect problem on the Forest during 1966 was the mountain pine beetle. Briefly, both large and small infestation centers of undetermined potential exist Forest-wide, with the largest outbreak occurring in Stump Creek and in the head of Terrace Canyon. Predictions for 1967, based on systematic evaluations, indicate no letup in either intensity or extent of tree killing. The complex of lodgepole pine defoliators that was active near Palisades Reservoir diminished to less damaging levels.

Mountain pine beetle, Dendroctonus ponderosae

Mountain pine beetle activity increased substantially on the Forest in 1966. Small infestation centers of 3-10 trees each have appeared wherever lodgepole pine occurs throughout the Forest. In nearly all of the existing infestations increased beetle activity has resulted in an increase in the number of trees killed and an extension of infestation boundaries into previously infested areas. The most noticeable increase was in the Diamond Flat area. Here, new infestations showed up in Diamond Flat proper and an explosive buildup occurred in Stump Creek and in the head of Terrace Canyon. In this infestation where an estimated 5,000 trees were infested in 1965, many more trees have been taken in 1966. Elsewhere on the Forest, scattered infestations of damaging proportions continue to eat away at lodgepole stands in the upper tributaries of Crow Creek, in the headwaters of Giraffe Creek, around Sulphur Peak, in many of the side drainages of McCoy Creek, and in the head of Pritchard Creek. As evident on the aerial survey map many additional infestations of undetermined potential occur throughout the Forest this year. In fact, wherever there is lodgepole pine there are mountain pine beetle infestations.

Biological evaluations were conducted in sixteen areas on the Forest during the fall of 1966. In each area bark samples were removed and counts made of brood numbers, parasites and predators, and the number of attacks per unit area. Additional data was taken on attack ratios, brood stage and condition, the incidence of pitchouts, and certain other factors, such as inter- and intra-species competition, that can affect brood survival. Consideration also was given to stand composition, timber depletion, and the number and availability of susceptible host trees.

High brood densities, coupled with various combinations of other biological factors, indicate a continued epidemic situation in these areas: Terrace Canyon, Diamond Flat, Meadow Spring - Green Basin, Sulphur Peak, Sage Creek -

Freeman Pass, Wells Canyon, Tin Cup Creek (near Chicken Creek Trail), South Fork Sage Creek, and in Clear, Crow, and Giraffe Creeks. All of these areas contain lodgepole pine of adequate size and condition to maintain or increase this high rate of tree killing for at least another year.

Less aggressive beetle populations exist in Antelope and Red Pine Creeks which may indicate decreasing activity in those areas. Successive years of beetle activity in upper Tin Cup, Gravel, and Pritchard Creeks have depleted these stands to the extent where it is doubtful if sufficient host material remains to maintain the high-level populations that have built up in these stands. These and other biological data suggest decreased beetle activity and a reduction in tree killing in these areas during 1967.

There is no indication at this time that biological factors such as parasites and predators, or overwintering mortality, will play a significant role in reducing the population level in 1967. In those areas where the potential of the population to increase is high and sufficient quantities of host material are available, artificial control measures would be required to reduce tree killing.

Sugar Pine Tortrix, Choristoneura lambertiana

The relatively extensive defoliation of lodgepole pine along the west bank of Palisades Reservoir that was so prevalent in 1965 did not show from the air in 1966. Entomologists on followup ground surveys reported the presence of a defoliating insect but at a population level too low to cause discernible damage. Damage in this area was caused previously by a complex of defoliating insects including a budworm, a tortrix, a tube moth, and a needle sheath miner; samples taken this year however, revealed only one insect, the sugar pine tortrix, Choristoneura lambertiana still in evidence. The reason this insect gained dominance over the other defoliators is unknown.

This small infestation is actually only one part of a rather extensive Region-wide outbreak. Infestations of various sizes and intensities exist on the nearby Targhee, Teton, and Bridger National Forests. Since this outbreak has been in progress, information has been gathered on certain phases of the insect's biology and feeding habits, and effects on the host heretofore unknown. Feeding damage is confined almost entirely to the new growth. All sizes and age classes are attacked, and even the most heavily defoliated trees will refoliate the following year. In other areas where lodgepole pine has been subjected to repeated defoliation for a number of years no apparent permanent damage has resulted. There has more than likely been some growth loss, but the amount has yet to be determined. The possibility that heavy and repeated feeding pressure has weakened the trees, predisposing them to attacks from other insects, is of equal concern

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No data are available from which trend predictions can be accurately made. It was evident in 1966, however, that biological control factors such as parasites, predators and disease were insufficient to have a significant impact on this year's population level. Unless subsequent changes in factors influencing the population occur this winter or next spring, little change can be expected in either the intensity or extent of damage in 1967.

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